

REMARKS

Status of case

Claims 1-2, 4-10, and 12 are currently pending in this case. Claims 3 and 11 were withdrawn from consideration.

Specification

The specification was objected to in paragraph 0077 as reciting "as shown in Figs. 1 and 51". Applicants amend the specification where it is believed appropriate. No new matter is added by this amendment.

Rejection under 35 U.S.C. §102(b)

Claims 1, 2, 4, 5 and 7-10 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 4,592,387 (Rogers). Claims 1, 2, 4-10 and 12 were also rejected 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,074,698 (Hobson et al.).

The Rogers reference teaches a manually operated, power-assisted, self-sealing fluid coupling which utilizes pressurized fluid to interconnect the coupling parts. See abstract. The Rogers reference further teaches a fluid coupler similar to that described in the background section of the present application. Specifically, the Rogers reference teaches a sleeve slidably mounted on the tubular body is moved to a locking position under the action of a spring which radially inwardly forces locking balls provided in the tubular body into a groove of the male coupler, to thereby securely hold the male coupler within the female coupler. See col. 2, lines 20-36 ("Radially displaceable detents in the form of balls are mounted upon the outer end of the sleeve for cooperation with a groove formed in the male part nose, and the female part includes a detent operating actuator which locks the male part to the sleeve as the sleeve is retracted into the female part."); see also Figs. 2-5. Thus, the Rogers reference suffers from the problems as recited in the background of the present application. See paragraph [0005]. In particular, the male coupler in the Rogers reference may suddenly become disengaged and move out from the female coupler before the annular groove reaches a position for receiving the locking balls.

The Hobson reference teaches an automatic coupling device having a body member movably mounted on a mounting plate fixed to the implement, and a sleeve member movably mounted on the body member. See abstract. Similar to the Rogers reference, the Hobson

reference teaches a sleeve slidably mounted on the tubular body is moved to a locking position under the action of a spring which radially inwardly forces locking balls provided in the tubular body into an annular groove of the male coupler, to thereby securely hold the male coupler within the female coupler. See col. 3, lines 24-29 (“In addition, the releasable means includes a plurality of locking balls 30, constituting second locking elements, carried in compatible holes formed in the sleeve member 22 near one end thereof. As is usual, the locking balls 30 can extend partially into the bore 22 of the sleeve member 21.”); see also Figs. 1-4.

In contrast to the cited references, one aspect of the invention discloses and claims a securing or holding member. See claim 1 (“a securing member for engaging with and securing said outer movable member to said unlocking position, said securing member being disengaged from said outer movable member to allow said outer movable member to move to said locking position when the locking member receiving recess has been moved to an axial position for receiving said locking member”); see also claim 7 (“a holding member for engaging with and holding said outer movable member to said unlocking position, said holding member being disengaged from said outer movable member to allow said outer movable member to move to said locking position when the male coupler has been inserted into said cylindrical male coupler receiving portion and reached a position wherein the locking member receiving recess is located at an axial position for receiving said locking member”). The securing or holding member may function to prevent the sleeve from accidentally moving to the locking position in a situation that the male coupler suddenly becomes disengaged and moves out from the female coupler before the annular groove of the male coupler reaches a position for receiving the locking balls. One example of the securing or holding member is disclosed in the present application as holding balls 30. Holding balls 30 work in combination with the locking balls 22 in order to prevent the sleeve from accidentally moving to the locking position improperly. Both the Rogers and Hobson references wholly fail to teach or even suggest the securing or holding member. Rather, the Rogers and Hobson references merely teach some form of locking member similar to that described in the background of the present application. Therefore, claims 1 and 7, and the claims that depend thereon, are patentable over the cited references.

In addition, claim 7 further recites “a handle fixedly connected to said outer movable member, said handle enabling an operator to hold said female coupler by grasping said handle for coupling said female coupler with the male coupler”. By using the recited handle, an operator

may hold the female coupler by gripping the handle by the hands, and can advance the female coupler toward a male coupler so that the male coupler is inserted into the female coupler. By advancing the female coupler using the handle, one may bring the female and male couplers into a complete connecting state wherein the outer movable member is positioned at a locking position for urging the locking member to a locking member receiving recess formed in the outer surface of the male coupler. See, e.g., paragraph [0079]. One example of the handle is shown in the application as element 43. As disclosed in the specification, the handle 43 may operate in combination with holding balls 30 to engage the female coupler with the male coupler, as discussed in the following:

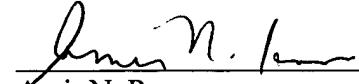
During operation, an operator grips the handles 43 by hand to hold the female coupler 1; then, as shown in FIG. 1, manipulates the female coupler 1 to align it with the male coupler 2, and advances the same towards the male coupler 2, or rightwards as viewed in FIG. 1. In this operation, when the annular groove 64 of the male coupler 2 has been brought into a position wherein the locking balls 22 can move into the annular groove 64, the holding balls 30 can move radially inwardly and disengage from the annular groove 32 and, substantially simultaneously, a right side surface defining the annular groove 64 is engaged by an annular step portion formed on the interior surface of the tubular member 20 to prevent further advancement of the tubular coupler body 3 towards the male coupler 2.

Paragraph [0079]. Neither of the cited references discloses “a handle fixedly connected to said outer movable member”. In addition to the reasons cited above, claim 7 and the claims that depend thereon are patentable over the cited references.

SUMMARY

Applicants submit that based on the foregoing remarks, the rejections have been traversed, and that the claims are in condition for allowance. Should there be any remaining formalities, the Examiner is invited to contact the undersigned attorneys for the Applicants via telephone if such communication would expedite this application.

Respectfully submitted,



Amir N. Penn
Registration No. 40,767
Attorney for Applicant

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200